

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: August 25, 2020**

REGULAR CONSENT EFFECTIVE DATE August 26, 2020

DATE: August 17, 2020

TO: Public Utility Commission

FROM: Eric Shierman

THROUGH: Bryan Conway and JP Batmale **SIGNED**

SUBJECT: PACIFIC POWER:
Docket No. UM 1729(4)
Update to Standard Avoided Cost Schedule for Qualifying Facilities.

STAFF RECOMMENDATION:

The Public Utility Commission of Oregon (Commission) should adopt Pacific Power's (PacifiCorp or Company) filing, which updates its Standard Avoided Cost Schedule payments.

DISCUSSION:

Issue

Whether the Commission should approve Pacific Power's update to its Standard Avoided Cost Schedule.

Applicable Rule

OAR 860-029-0040(4) (a) requires utilities to file updated avoided cost prices for qualifying facilities under the Public Utility Regulatory Policies Act of 1978 within 30 days of Commission integrated resource plan (IRP) acknowledgment.

Analysis

Background

On June 8, 2020, the Commission acknowledged PacifiCorp's 2019 IRP with Order No. 20-186. The Company filed its post-IRP update of standard avoided cost

purchases from eligible qualifying facilities that same day. At the time, PacifiCorp's May 1st annual update was already on the agenda of the June 16, 2020 Public Meeting. The current prices were approved by the Commission at that public meeting in Order No. 20-193. The Company first proposed an effective date of July 18, 2020. PacifiCorp twice filed extensions of the effective date at the request of Staff.

Comparison

To compare all price changes, Staff asked the Company for a redline strikeout version of tables of the new proposed prices with the prices currently in effect.¹

Figure 1: Standard Fixed Avoided Cost Prices for Base Load and Wind QF ($\$/kWh$)

Deliveries During Calendar Year	Base Load QF (1,3)		Wind QF (1,2,3)		Wind Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(a)	(b)	(c)	(d)	(e)
2020	2.58	1.92	2.542-52	1.881-86	<u>0.39</u>
2021	3.11	2.23	3.093-05	2.212-17	<u>0.19</u>
2022	3.15	2.26	3.133-09	2.232-20	<u>0.27</u>
2023	3.24	2.24	3.223-18	2.212-17	<u>0.29</u>
2024	3.33	2.322-11	3.293-26	2.292-04	<u>0.35</u>
2025	3.41	2.342-14	3.353-34	2.282-08	<u>0.61</u>
2026	5.143-71	3.112-54	6.053-64	3.062-47	<u>0.45</u>
2027	5.364-12	3.272-72	6.264-05	3.202-64	<u>0.69</u>
2028	5.614-32	3.472-85	6.514-25	3.382-78	<u>0.93</u>
2029	5.864-72	3.683-06	6.754-64	3.552-99	<u>1.29</u>
2030	6.116-25	3.883-33	6.994-13	3.723-25	<u>1.61</u>
2031	6.316-45	4.033-46	7.214-28	3.863-38	<u>1.63</u>
2032	6.516-65	4.183-60	7.434-43	4.003-52	<u>1.74</u>
2033	6.716-84	4.333-73	7.654-58	4.153-65	<u>1.79</u>
2034	6.957-08	4.513-90	7.924-77	4.343-82	<u>1.75</u>
2035	7.197-31	4.694-07	8.184-95	4.523-98	<u>1.72</u>
2036	7.407-51	4.844-20	8.445-10	4.694-11	<u>1.58</u>
2037	7.727-82	5.114-45	8.785-37	4.954-35	<u>1.62</u>
2038	7.998-08	5.324-64	9.075-57	5.154-54	<u>1.66</u>
<u>2039</u>	<u>8.32</u>	<u>5.59</u>	<u>9.43</u>	<u>5.42</u>	<u>1.70</u>
<u>2040</u>	<u>8.50</u>	<u>5.70</u>	<u>9.63</u>	<u>5.53</u>	<u>1.74</u>

¹ PacifiCorp. Response to OPUC Data Request 13 UM 1729, August 7, 2020.

Figure 2: Standard Fixed Avoided Cost Prices for Fixed and Tracking Solar QF ($\$/kWh$)

Deliveries During Calendar Year	Fixed Solar QF (1,2,3)		Tracking Solar QF (1,2,3)		Solar Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(e)	(f)	(g)	(h)	(i)
2020	2.552-51	1.891-86	2.552-51	1.891-86	<u>0.31</u>
2021	3.103-05	2.222-16	3.103-05	2.222-16	<u>0.15</u>
2022	3.133-08	2.242-19	3.133-08	2.242-19	<u>0.22</u>
2023	3.223-17	2.222-17	3.223-17	2.222-17	<u>0.24</u>
2024	3.303-25	2.292-03	3.303-25	2.292-03	<u>0.29</u>
2025	3.363-34	2.292-07	3.363-34	2.292-07	<u>0.50</u>
2026	3.673-63	3.072-46	3.773-63	3.072-46	<u>0.37</u>
2027	3.834-04	3.222-64	3.944-04	3.222-64	<u>0.56</u>
2028	4.034-24	3.402-77	4.134-24	3.402-77	<u>0.76</u>
2029	4.224-63	3.572-98	4.324-63	3.572-98	<u>1.05</u>
2030	4.417-46	3.753-24	4.527-67	3.753-24	<u>1.31</u>
2031	4.577-68	3.903-37	4.687-90	3.903-37	<u>1.32</u>
2032	4.737-91	4.043-51	4.848-12	4.043-51	<u>1.42</u>
2033	4.898-13	4.183-64	5.008-35	4.183-64	<u>1.45</u>
2034	5.098-39	4.373-81	5.218-62	4.373-81	<u>1.42</u>
2035	5.298-65	4.553-97	5.418-88	4.553-97	<u>1.40</u>
2036	5.478-88	4.724-10	5.609-11	4.724-10	<u>1.28</u>
2037	5.759-22	4.984-35	5.889-46	4.984-35	<u>1.31</u>
2038	5.979-50	5.184-54	6.109-75	5.184-54	<u>1.34</u>
<u>2039</u>	<u>6.26-</u>	<u>5.45-</u>	<u>6.39-</u>	<u>5.45-</u>	<u>1.37</u>
<u>2040</u>	<u>6.39</u>	<u>5.56</u>	<u>6.52</u>	<u>5.56</u>	<u>1.40</u>

Figure 3: Renewable Fixed Avoided Cost Prices for Base Load and Wind QF (\$/kWh)

Deliveries During Calendar Year	Renewable Base Load QF (1, 4)		Wind QF (1, 2, 3)		Wind Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(a)	(b)	(c)	(d)	(e)
2020	2.58	1.92	2.542-52	1.884-86	<u>0.39</u>
2021	3.114-05	2.231-44	3.091-74	2.211-38	<u>0.19</u>
2022	3.154-11	2.261-53	3.131-74	2.231-47	<u>0.27</u>
2023	3.244-25	2.241-52	3.221-82	2.211-46	<u>0.29</u>
2024	4.164-38	1.691-51	4.561-89	1.651-45	<u>0.35</u>
2025	4.294-49	1.751-54	4.671-94	1.691-48	<u>0.61</u>
2026	4.394-60	1.741-56	4.802-00	1.701-49	<u>0.45</u>
2027	4.534-72	1.781-57	4.932-07	1.711-50	<u>0.69</u>
2028	4.644-81	1.881-63	5.022-09	1.781-56	<u>0.93</u>
2029	4.794-92	1.931-65	5.142-15	1.801-58	<u>1.29</u>
2030	4.935-04	1.991-67	5.272-20	1.821-59	<u>1.61</u>
2031	5.055-15	2.041-71	5.392-25	1.881-63	<u>1.63</u>
2032	5.135-22	2.141-79	5.482-26	1.961-71	<u>1.74</u>
2033	5.225-31	2.231-86	5.582-29	2.051-78	<u>1.79</u>
2034	5.315-40	2.301-93	5.682-32	2.131-84	<u>1.75</u>
2035	5.415-50	2.361-98	5.792-35	2.191-89	<u>1.72</u>
2036	5.525-61	2.392-02	5.932-40	2.241-93	<u>1.58</u>
2037	5.635-85	2.462-07	6.052-44	2.301-98	<u>1.62</u>
2038	5.755-96	2.532-12	6.182-48	2.372-03	<u>1.66</u>
<u>2039</u>	<u>5.89</u>	<u>2.59</u>	<u>6.32</u>	<u>2.42</u>	<u>1.70</u>
<u>2040</u>	<u>6.03-</u>	<u>2.64</u>	<u>6.48</u>	<u>2.47</u>	<u>1.74</u>

Figure 4: Renewable Fixed Avoided Cost Prices for Fixed and Tracking Solar QF (\$/kWh)

Deliveries During Calendar Year	Fixed Solar QF (1,2,3)		Tracking Solar QF (1,2,3)		Solar Integration
	On-Peak Energy Price (e)	Off-Peak Energy Price (f)	On-Peak Energy Price (g)	Off-Peak Energy Price (h)	All hours Energy Charge (i)
2020	2.552.51	1.891.86	2.552.51	1.891.86	0.31
2021	3.104.41	2.221.38	3.104.71	2.221.38	0.15
2022	3.134.48	2.241.46	3.134.78	2.241.46	0.22
2023	3.224.62	2.221.45	3.224.94	2.221.45	0.24
2024	2.294.76	1.661.44	2.485.08	1.661.44	0.29
2025	2.354.88	1.701.47	2.555.21	1.701.47	0.50
2026	2.425.00	1.711.48	2.625.34	1.711.48	0.37
2027	2.505.13	1.731.49	2.715.48	1.731.49	0.56
2028	2.545.23	1.801.55	2.755.58	1.801.55	0.76
2029	2.615.35	1.831.57	2.835.71	1.831.57	1.05
2030	2.695.47	1.851.58	2.915.84	1.851.58	1.31
2031	2.755.59	1.911.63	2.985.97	1.911.63	1.32
2032	2.785.68	2.001.70	3.016.06	2.001.70	1.42
2033	2.825.77	2.081.77	3.066.16	2.081.77	1.45
2034	2.865.87	2.161.83	3.106.27	2.161.83	1.42
2035	2.905.98	2.221.88	3.156.38	2.221.88	1.40
2036	2.976.10	2.271.92	3.226.51	2.271.92	1.28
2037	3.036.22	2.331.97	3.296.64	2.331.97	1.31
2038	3.096.33	2.402.02	3.356.76	2.402.02	1.34
<u>2039</u>	<u>3.16</u>	<u>2.45</u>	<u>3.43</u>	<u>2.45</u>	<u>1.37</u>
<u>2040</u>	<u>3.24</u>	<u>2.50</u>	<u>3.52</u>	<u>2.50</u>	<u>1.40</u>

During the last post-IRP avoided cost update, the 15-year levelized price of fixed renewable avoided cost prices for renewable resources were a concern.² To capture this difference across time in one price, here is a comparison of a 15-year levelization of current fixed renewable prices with the proposed new prices.

² OPUC. Order No. 18-273, July 18, 2020, pages 11-14.

Price	Base Load	Wind	Fixed Solar	Tracking Solar
Current	\$57.98	\$29.41	\$61.98	\$65.65
Proposed	\$55.92	\$58.55	\$37.71	\$39.50

PacifiCorp’s proposed prices for wind resources are higher than the base load resource, and the solar prices are lower, a reversal of current renewable fixed prices.

Drivers of Change

The post-IRP update resulted in several changes. The demarcation of resource deficiency for standard fixed avoided cost prices moved up from 2030 to 2026, resulting in increases to on-peak avoided cost prices starting in 2026. For renewable fixed avoided costs, resource deficiency for renewable fixed avoided costs moved back from 2021 to 2024, resulting in a decline of on-peak renewable avoided cost prices.

Second, decreases in the cost of proxy resources, due to technological improvements, put downward pressure on prices in the long-term.

The most substantive changes in this filing are to avoided cost rates for solar resources, and are due to a third driver, changes to the capacity contributions of solar resources. Here are the capacity contributions behind the proposed prices for wind and solar resources, which are taken from PacifiCorp’s acknowledged IRP.

The wind resource capacity contribution has grown:

IRP	Wind	Fixed Solar	Tracking Solar
LC 67	11.8%	53.9%	64.8%
LC 70	54.5%	11%	14.8%

The solar resource capacity contribution has decreased significantly.

2019 IRP Capacity Contribution Values

	Capacity Factor (%)	Capacity Contribution (%)	
	Annual	Summer	Winter
Tracking Solar			
Idaho Falls, ID	28%	12%	13%
Lakeview, OR	29%	15%	14%
Milford, UT	32%	10%	23%
Yakima, WA	25%	12%	10%
Rock Springs, WY	30%	11%	19%
Wind			
Pocatello, ID	37%	19%	27%
Arlington, OR	37%	57%	21%
Monticello, UT	29%	18%	22%
Goldendale, WA	37%	57%	21%
Medicine Bow, WY	44%	13%	35%

Source: 2019 IRP, Table N.4 – Final CF Method Capacity Contribution Values for Wind, Solar, and Storage

Fixed Tilt Solar			
Oregon	25%	11%	14%

Source: 2019 IRP, Final CF Method inputs applied to OR Fixed-Tilt Solar Profile

Seasonal Contribution Weighting	92%	8%
--	-----	----

Source: 2019 IRP, Appendix N workpapers

The capacity factors and seasonal weightings for solar resources in the 2019 IRP create significantly lower capacity contributions for both fixed and solar resources than what has been in place since the 2017 IRP. The solar resource modeled in the IRP in Oregon is located in Lakeview. Its capacity contribution in the 2019 IRP is 14.8 percent, reflecting the blending of a seasonal weighting of 92 percent for the summer peak period's 15 percent capacity contribution and a weighting of 8 percent during the winter peak period's 14 percent capacity contribution. The proposed avoided cost prices for both fixed and tracking solar reflect this significant drop in capacity contribution for solar resources.

During a workshop call held on August 11, 2020, Staff asked PacifiCorp to explain the decrease in capacity contribution of solar resources. Company personnel responded that substantive solar generation has been added to the system such that hours with the

highest loss of load probability (LOLP hours) have moved away from hours that are typically more solar-generating intensive. And, in general, as more solar renewables are added to the system the capacity contribution of this resource decreases.

At that same video conference workshop on August 11, 2020, with representatives of PacifiCorp and stakeholders, the Community Renewable Energy Association and the Renewable Energy Coalition voiced concern about this drop in solar prices. However, it is Staff's understanding that no stakeholder intends to challenge PacifiCorp's proposed avoided cost prices.

Staff understands how PacifiCorp arrived at the capacity contribution adjustment for solar avoided cost prices and confirms that PacifiCorp followed established methods in applying the acknowledged data into the Company's post-IRP update.

Peak Hours

Peak hours are identified as 6 a.m. to 10 p.m., which to Staff seem very broad. Defining a more precise on-peak period is likely to reflect costs more accurately and be more representative of loss of load probability analysis. Staff believes that a shorter, more targeted peak period will have two impacts. First, peak period prices will increase as the same marginal capacity costs are spread over fewer hours. Second, a more precise identification of peak hour costs may shorten the payback period for investments in battery storage and other technological innovations designed to deliver solar power more effectively over the more narrowly-defined peak periods.

Staff believes this issue, which represents a methodological change to PacifiCorp's price calculation, should be explored further in UM 2000 and UM 2011. For the purposes of this post-IRP avoided cost update, Staff is not recommending changes to the Company's traditional definition of peak hour definitions.

Conclusion

Staff has no recommended changes to Pacific Power's avoided cost update.

PROPOSED COMMISSION MOTION:

Approve Pacific Power's update to its Standard Avoided Cost Schedule.